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WATER PUMP

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ABSTRACT

PROBLEM TO BE SOLVED: To improve the durability and reliability of an annular lip seal by introducing the hydrostatic pressure in a pump chamber to the outer circumferential side of the annular lip seal, and sealing the space between a shaft and a housing with the intensity according to the pressure in the pump chamber by the elastic force of the annular lip seal when a water pump is operated.

SOLUTION: A cylindrical member 6 fixed to the inner circumference of a water pump housing 2 holds a shaft 8 through a ball bearing 7 and a roller bearing 7a, and a shaft 8 rotates an impeller 12 by the rotation received from a pulley 11. An annular lip seal 14 is fitted to a stepped part 6a between the shaft 8 and the cylindrical member 6. The fluid dynamic pressure in the pump chamber 13 is introduced to the outer circumferential side of the annular lip seal 14 through three hydrostatic passages 16 provided at equal intervals on the water pump housing 2, and the clearance between the inner circumferential side of the annular lip seal 14 and the shaft 8 is sealed by the annular lip seal 14 with the pressure according to the fluid dynamic pressure in the pump chamber 13.

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